

GENERAL AND REVENUE SECRETARIAT.

*1904?
(Genl. Misc.)

File No. 235-11

Serial Nos. 1-23

Papers Filed.

Month May 1913

SUBJECT.

Invitation for "Improvements in furnaces for burning the Commercial residues of different industries especially in oil works, for the purpose of obtaining wood charcoal" by Louis Felizat
Saron France.

PREVIOUS REFERENCES.

LATER REFERENCES.

K. V. Krishna Rao 7/10.6.13

GENERAL AND REVENUE SECRETARIAT.

(*per : mis*)

NOTES.

gm File No. 235 ¹¹/₁₂

FILE HEADING.

Invention for improvements in furnaces for burning the commercial residues of different industries especially in oil works for the purpose of obtaining wood charcoal" by Louis Felizat, Director-Delegat of Société Huilerie et Savonnerie de Lucian, of Salon (Bouches du Rhône), France

From

Messrs Remfry & Son, Solicitors & Patent Agents, Calcutta

No. *letter*

Dated 10. 2. 12 Received 13. 2. 12

Diary No. 3437

Enclos. 2

Spare Copies.

Serial No. /

BRIEF ABSTRACT OF LETTER.

Forwards an application for leave to file a specification of the above named invention and also a power-of-attorney and remits Rs 4/- therefor.

NOTES AND ORDERS.

1. *The application and the stamp fees have been received*
The usual drafts are subd.

9499
27-2-12 *15.41*

2.

Issue

m
28/2/12

NOTES—First Sheet.

Serial
No.

-2

To. The Chief Engineer, ---

no G 4627 & S. 3. 12 Enc

Forwards for report the apt
received with the above.

3

To. The Superintendent of Stamps

no G 4628 & S. 3. 12 Enc 1 & Enc.

Forwards for return after getting the
Mysore Stamp impressed, the Power of
Attorney received with sl

4

To. Dy Commr, Bangalore

no G 4629 & S. 3. 12. Enc Rs 10/-

Forwards Rs 10/- and requests
acknowledgment.

5

From the above. no 154 & ---

Acknowledges the receipt of the amount
forwarded with the above

6

From the Supdt of Stamps. no 117 & 7. 3. 12.

Returns duly stamped the power of att
forwarded with sl 3 & requests acknowledgment

3 Draft subd.

9499
15.3.12 T. B. K.

4 Issue

16/3/12

7

To. The Supdt of stamps no. G 5007 & 23

Ack^s the receipt of the stamped Power
of Attorney forwarded with the above

Cus

8 76²Serial
No.

8

From the Chief Engineer. No. 6517 of 5-8-12.

In reply to Sl 2, forwarded copy of letter No. 123 of 11. 7. 12 to him, from the Secretary, Industries Commerce Committee of the Economic Conference. ^{wood distillation is not carried on at present in Mysore} Reporting that it is highly improbable that in immediate future the patent for this invention will be of any use in connection with the ind work in Mysore, and that the invention may be assumed to possess a certain amount of origin sufficient to constitute the subject-matter for a patent.

The Secretary to the Industries & Commerce Committee adds that if further evidence regarding the originality of the ~~protected~~ invention is required, the applicant may be asked to state if his application for a patent in the United Kingdom has been accepted.

6. Draft subd for approval or other orders.

5499
12-8-12

14-8-12

7 Issue

15/8/12

9. To Messrs Rumpfy & Son Calcutta 9.954 of 19-8-12. - With refer to Sl 1. requests them to forward an authenticated copy of the order passed on a corresponding application stated to have been made in the United Kingdom of Great Britain

Sms

R. S. 12]

General and Revenue
Secretariat.

gm File No. 235 of 1911.

248

Serial
No.

10 From Messrs Remptz & Son. D. 17. 10. 12.

In compliance with Sl 9, forward a
Certified copy of the British printed Spec-
ification.

8. This specification and that subd to the
Govt do not agree with each other, word for
word. Moreover the Secretary to the Industries
and Commerce Committee states that (in
the enclosure to Sl 8) that ^{it is highly improbable} (in the immediate
future this patent will be of any use in
connection with the industrial work in
Mysore.

9 Subd with a draft for approval or other
orders.

2489
21. 10. 12

to W.S.).

18K
2/11

Issue
11

11. To the Chief Engineer, No G. 2427 of 7. 11. 12 - With refe
to Sl 8 forwards a certified copy of the British printed
specification of a similar invention by the same
inventor & requests that opinion may be furnished
as to whether under the circumstances, the leave ap-
plied for for filing the specific may be granted.

12 From the Chief Engineer - No 9498 of 22. 11. 12

In reply to the above, states that under the cir-
cumstances represented, the leave applied for for filing

Srs

Serial
No.

the specification may be granted.

12 Draft authorising the filing of the specification
subd. for approval or other orders.

3/99
27.11.12 VS. 13 may be approved
(1st Concurrence)

44 Draft appd. by 1st Concurrence
MSS 28.11.12

15 Issue
28.11.12

13. To Mr. Louis Feligat. France. G. 2965
D/4-12-12 Authorizes him to file a
specification of the said invention

14. To Messrs Remfrey & Son, Calcutta.
G. 2966 D/4-12-12. Forwards the abo.
(Sl/3) for communication to the party
concerned.

15 From Messrs Remfrey & Son, Calcutta. D/4. 4-13.

Forward Rs 30/- and 4 copies of the specifi-
and request the filing of the specification.

16 The amount has been received. The
application is in time having been made
within 6 months from the 4th December 1912
the date of granting permission to file the
specification.

R. S. 12]

General and Revenue
Secretariat.

Gm File No. 235

of 191/

Serial
No.

17 The usual drafts are subd The certificate at foot of the G.O. granting permission to file specification requires signature.

9A99
17.4 13 M.

Issue

SP
18/4

16 To the Compiler, Mysore Gazette, No. G 6857 of 3.5.13 — Notifies the filing of the Specifi. of the invention refd to

17 To Messrs. Remy & Son, Calcutta, No. G. 6858 of 3.5.13 — I.D. Copy of the above notice for communication to the party concerned & returns the ~~ref~~ S.L. 13 with the certificate at foot duly filled up & signed.

18 To the Supdt, Govt Museum, State Geologist & Chief Engineer, No. G. 6859-61 of 3.5.13 — I.D. for record, a copy of the above Specifi.

19. To the D.C., Hy. Dept, Bangalore, No. G. 6862 of 3.5.13 — Forward No. 30 of recd in S.L. 13.

20. From the above. No. 20 & 5.5.13

Acknowledges the receipt of the amount forwarded with the above

21 From the Supdt, Govt Museum. No. 284 of 6.5.13

22 From the State Geologist No. 2719 of 6-5-13
Acknowledges the receipt of the specifi. forwarded with S.L. 18

The Chief Engineer's reply to S.L. 18 may be awaited

Subd
9A99
15.8.13 M.

SP
15/5

NOTE—Contn. sheet.

R. S. 12]

General and Revenue
Secretariat.

Gen File No. 285

of 191/

6439

Serial
No.

23

From the Chief Engineer. No. 3897 & 15. 5-13.

Acknowledges the receipt of the specifications
forwarded with Sl. 15

The copy may now be filed

Subd
GA 99
31 5/13
BR

Sol 31/5

X
2/16

GENERAL.

To

THE ~~PATENT~~ SECRETARY, TO THE GOVERNMENT OF MYSORE,
~~PATENT OFFICE,~~ GENL. & REVENUE DEPTS.
~~CALCUTTA.~~ BANGALORE,

MYSORE.

FROM
REMFRY & SON,
SOLICITORS AND PATENT AGENTS,
CALCUTTA.

1911-1912
SECTION <i>Gen: mis</i>
FILE No. 2354-1911-12
SERIAL No. / Sir,

Dated CALCUTTA, the 10th February 1912.

We have the honour to forward herewith an Application of LOUIS FÉLIZAT, Director-Delegate of Société Huilerie et Savonnerie de Lurian, of Salon (Bouches du Rhône), France, an Inventor, for leave to file a Specification under Part I of the Mysore Inventions & Designs Regulations, 1894, in respect of an Invention for "IMPROVEMENTS IN FURNACES FOR BURNING THE COMMERCIAL RESIDUES OF DIFFERENT INDUSTRIES, ESPECIALLY IN OIL WORKS, "FOR THE PURPOSE OF OBTAINING WOOD-CHARCOAL", and solicit the favour of your submitting the same to H. H. the Dewan.

The Power of Attorney under which we are acting is enclosed and we solicit the favour of your having same stamped Re. 1/-.

A Post Office Order for Rs. 11/- is sent to-day.

I have the honour to be,
Sir,
Your very obedient servants,

I.M.B.

REMFRY & SON


91

COUPON. The remitter may write here any communication to the payee.
Re. 11 As. re L. FELIZAT.
Patent Application.
REMFERY & SONS
10/2/12 Remitter.

To B. & V.
13/2/12

Myson
son

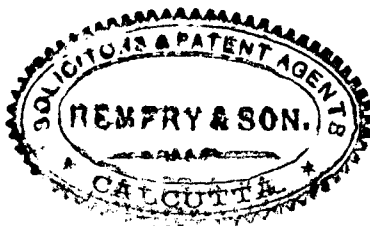
(1)

SPECIFICATION

--:--:--

TO ALL WHOM IT MAY CONCERN. BE IT KNOWN that I
is Félizat, director-delegate of Société Huilerie et
Savonnerie de Lurian, of Salon (Bouches-du-Rhône), France
am in possession of an Invention for Improvements in
furnaces for burning the commercial residues of different
industries, especially in oil works, for the purpose of
obtaining wood-charcoal, and I, the said Louis Félizat,
do hereby declare the nature of the said Invention and
in what manner the same is to be performed to be particularly
described and ascertained in and by the following
statement thereof, that is to say:-

- 1 -



The present invention relates to improvements in furnaces in which industrial residues are burnt, such as the residuum of olives, nut-shells, sawdust, wood saw-dust, shells and other woody substances for the purpose of obtaining wood-charcoal or charcoal-dust.

A furnace of this kind is described in the French Patent N^o 409.916 of the 1st March 1909.

The rapidity, however, with which these substances burn when thrown into a receptacle brought to a certain temperature, necessitates considerable dexterity in charging the furnace, and above all in discharging from the furnace the wood-charcoal produced which tends to abstract it very quickly, since, in the arrangement as actually known, the discharging is carried out in a furnace with several compartments by stopping the different compartments alternately and withdrawing the charcoal which is found at the bottom by means of rakes for the purpose of directing it to a truck, where it is quenched.

On the other hand, this fact should also be remembered, that the charcoal-dust formed, if it falls too rapidly on the sole plates, still contains a relatively important percentage of volatile substances, which on the one hand, diminishes the efficiency of the furnace as a heating apparatus and on the other hand, diminishes the capability of the charcoal-dust produced to be employed

in the different possible applications.

Finally, the circulation of air in the furnace should be carefully supervised, for when the charcoal-dust brought to a red heat and freed from its volatile contents is brought into contact with a strong current of air it is instantly transformed into scoria.

The present invention has for its object improvements as regards these three considerations which relate to an automatic action in feeding the combustible substances to the furnace, to the regulation of the descent of the combustible substances and to the discharge of the charcoal-dust, which automatic action is essential if it is desired to obtain a really commercial working of the furnace with a maximum yield.

The furnace comprising the means by which this triple automatic action is obtained is represented in the accompanying drawings.

Fig. 1 is a vertical longitudinal section of the furnace according to one constructional method, this section being made along the line I-I of Fig. 2.

Fig. 2 is a vertical cross section on the line II-II of Fig. 1.

Fig. 3 is a horizontal section on the line III-III of Fig. 2.

As will be seen from these figures,

each compartment of the furnace (there are two in the figures, but it is possible to have only one or more than two) is divided into three parts A. B. C; the first part A or upper chamber forms the combustion chamber; it is into this chamber that the air passes and in which the volatile products contained in the residues are driven off. The second part B, situated below, is subjected owing to its position to the strong action of the upper current of air and the residues freed from their volatile contents are here carbonised and transformed into charcoal-dust. Finally, in the third part C or lower portion is provided the apparatus by which the quenching and discharging of the charcoal-dust is effected.

This having been explained, it is apparent, from the figures, how the triple automatic action afore-mentioned is effected.

The material (industrial residues) is passed along the whole length of a hopper 1 divided into several compartments and traversed along its axis by a shaft 2 to which any suitable motor transmits, by any suitable method of transmission a uniform movement of rotation; on this common shaft are mounted, in each compartment Archimedean screw members 3, 3', 3'', 4, 4', 4'', of opposite twist, so as to distribute the material and feed it up to the charging shafts 5, 5', 5'', to

the right of which are separating partitions 6, 6', 6". In these shafts turn vertical screws 7, 7', 7", operated by pinion transmission 8, 9, (8', 9', 8", 9"), or by any other suitable method of transmission; these screws feed the material methodically, prevent irregular descent and feed it up to the arch of the furnace.

This arrangement assures the distribution and the automatic feeding of the material to the height of the charging openings formed in the vault; these openings are three in number on the drawing but the number may evidently be variable according to the particular conditions of the furnace.

The material having thus been brought to the top of the arch it is necessary, as has been explained, to regulate the descent; for this purpose the chamber A is provided with two superposed plates 10, 11, each constituted by two longitudinal slabs forming between them a more or less open angle. The slabs 10 are jointed along the edge of the dihedral which they form and which opens towards the bottom of the furnace; their opposite edges 12, 12', do not touch the wall of the furnace, the space left free serving for the passage of the material which has fallen on the edge of the dihedral and descends on each side, on to the inclined planes 10, 10, with a rapidity which is proportional to the inclination

of these planes.

The slabs 11, 11, which meet the wall of the furnace, do not join at the apex 13, of the dihedral which they form and which opens towards the upper part of the furnace; the material falling through the openings 12, 12' slides therefore along the inclined planes 11, 11, with a rapidity which is proportional to the inclination of these planes and then collects in the channel 13 from which it falls into the second chamber B. A series of columns 14 (or any similar arrangement) supports the slabs (11, 11).

At the top of the chamber A, and in the front face of the furnace are provided the air openings 15, the section of which can be altered by a register not shown.

Through these openings 15 passes in an auxiliary air current which is caused by the draught. It follows from this that by suitably regulating thus the slope of the slabs 10, 10, and 11, 11 as well as the section of the openings 15, the descent of the residues can be regulated automatically in such a manner that the combustion of their volatile contents shall be absolutely complete.

The second chamber B is limited in height by the slabs 11, 11, and at the bottom by an arch 16 of a section practically semi-circular, the convexity of which is turned towards the top

of the furnace; it is in this chamber and retained on this arch during a suitable time that the residues are converted into charcoal-dust free from a too rapid action of the air.

Between the adges of the arch and the walls of the furnace are provided spaces 17, 17, through which the charcoal-dust sliding over the arch 16 passes, into the third chamber C; it is there submitted to a cooling action by radiation by means of water or cold air, the action of the refrigerating substance being assisted by baffles 18, which prevent the too rapid descent of the charcoal-dust; finally, after this latter descent, which is automatically regulated, the charcoal-dust reaches the endless conveyor 19 which may be an Archimedean screw provided at the bottom of the contracted section of the furnace.

It will be seen that the automatic regulation of the rapidity of descent is effected automatically by the combination of slabs or arches forming a slope, transversely, the inclination of this slope being suitable to the nature of the residues to be burnt; in the generality of cases there is an advantage in adopting a slope of 35° ; this is completed by the division of the whole furnace into three chambers, one in which active combustion takes place, one for carbonisation, and

one for quenching (for the purpose of discharging).

It is possible, further, without departing from the present invention, and when it is a question of treating material of low density, to adopt the modification of the method of carrying the invention into effect which is shown in cross section on figure 4. In order to give greater rapidity of descent to the light materials the retaining device of the chamber A has been reduced to a single arch; this arch 20 may have the shape of the arch 16 in the first three figures, and it can also be constituted by a series of slabs 20 disposed transversely in the furnace, separated one from the other and either perforated or not with openings 21. The second chamber B is then limited by the arch 20 and by a similar arch 22 in which the holes 23 form a baffle with the openings 21. The chamber C is then similar to that in the first three figures; the baffles may always however be replaced by steps formed on the inclined portion 24 of the walls of the oven.

Consider further in the present invention the modification of the method of carrying the invention into effect shown in cross section in figure 5. This method of carrying the invention into effect provides for the case in which it is necessary to treat very light combustible substances, all the parts of which have the same density (saw-dust). In this

case, a rapid and irregular descent of the material to be treated is less to be feared; on the other hand the combustion of the volatile substances takes place almost instantaneously.

It is possible, therefore, to omit the carbonising chamber by employing the method of planes simply inclined to the base of the combustion chamber. The carbonisation is then carried out on the inclined walls 25, 25, of the furnace and on the sole plate with the double slope 26; the charcoal-dust then falls through the longitudinal channels 27, into the chamber C from which it is discharged in the manner already described.

Whatever may be the method adapted of carrying the invention into effect, the operation is carried out by heating the furnace to a red heat; the charging for the starting of the furnace is then carried out through the charging doors 28, which, of course, are closed during the normal working of the furnace.

As regards the method of charging during working it may be remarked that that previously described and shown on the first three figures would give the maximum advantage, but that, in certain installations, the charging need not take place over the whole length of the arch, but only

through one or more openings such as 29 (Fig. 4); a wheel provided with blades, or a ventilator, fed from a charging hopper can then force the material to be burnt to the upper portion of the chamber A.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:-

The invention has for its object a furnace, with one or more compartments, for the economical production of wood charcoal obtained by the combustion of industrial residues, such as nut-shells, the residuum of olives, saw-dust, etc., the said furnace having the following characteristics which assure the continuity and the automatic character of its operation.

1. Each compartment is divided, by means of slabs suitably inclined to the horizontal, and forming baffles, and arches, more or less curved, and either perforated or not perforated into three parts; a combustion chamber in which the orifices for the supply of air open on the face of the furnace a carbonising chamber situated below, and at the bottom a discharging and quenching chamber, the slabs and arches together with their inclinations being combined in such a manner as to automatically regulate the descent of the combustible

*Myzore
specie.*

substances for the purpose of assuring the complete combustion of their volatile contents and of preventing the formation of scoria.

2. In the case of very light combustible substances all the parts of which have the same density, the omission of the carbonising chamber, leaving only a combustion chamber and a quenching chamber.

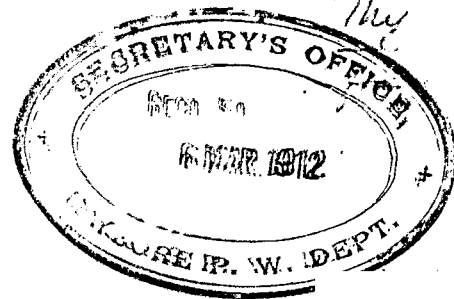
3. The material to be burned is fed automatically to the upper part of the arch of each compartment by means of one or more charging channels in which screws are provided to regulate the feeding of the material.

Louis Velizet
Louis Velizet
celly

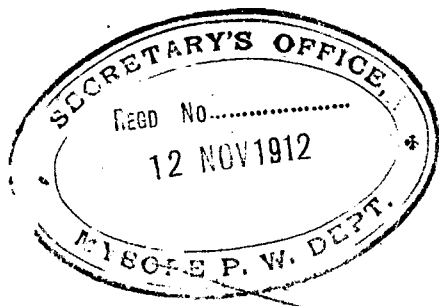


APPLICATION

--:



TO THE DEWAN OF MYSORE.



The Application of Louis Félizat, director-delegate of Société Huilerie et Savonnerie de Lurian, of Salon (Bouches-du-Rhône), France, for leave to file a Specification under Part I of the Mysore Inventions and Designs Regulation 1894.

1. The Applicant is in possession of an Invention for Improvements in furnaces for burning the commercial residues of different industries, especially in oil works, for the purpose of obtaining wood-charcoal; he is the Inventor thereof; and, to the best of his information and belief, the Invention is new within the meaning of Part I of the Inventions and Designs Act, 1888, and no circumstance exists which, if the Applicant is authorised to file a Specification and files it in accordance with that Part, will disentitle him to an Exclusive Privilege thereunder in respect of the Invention.

The Applicant has applied for a Patent in the United Kingdom in respect of this Invention, N^o 4935 dated the 27th day of February 1911. See Illustrated Official Journal (Patents) N^o 1155, page 296 Complete Specification filed the 27th day of February 1911. See Journal N^o 1155 page 296 and accepted on the day of 191 See Journal N^o page

2. The following is a description of the Invention:-

The present invention relates to improvements in furnaces in which industrial residues are burnt, such as the residuum of olives, nut-shells, sawdust, wood saw-dust, shells and other woody substances for the purpose of obtaining wood-charcoal or charcoal-dust.

A furnace of this kind is described in the French Patent N^o 409.916 of the 1st March 1909.

The rapidity, however, with which these substances burn when thrown into a receptacle brought to a certain temperature, necessitates considerable dexterity in charging the furnace, and above all in discharging from the furnace the wood-charcoal produced which tends to abstract it very quickly, since, in the arrangement as actually known, the discharging is carried out in a furnace with several compartments by stopping the different compartments alternately and withdrawing the charcoal which is found at the bottom by means of rakes for the purpose of directing it to a truck, where it is quenched.

On the other hand, this fact should also be remembered, that the charcoal-dust formed, if it falls too rapidly on the sole plates, still contains a relatively important percentage of volatile substances, which on the one hand, diminishes the efficiency of the furnace as a heating apparatus and on the other hand, diminishes the capability of the charcoal-dust produced to be employed

in the different possible applications.

Finally, the circulation of air in the furnace should be carefully supervised, for when the charcoal-dust brought to a red heat and freed from its volatile contents is brought into contact with a strong current of air it is instantly transformed into scoria.

The present invention has for its object improvements as regards these three considerations which relate to an automatic action in feeding the combustible substances to the furnace, to the regulation of the descent of the combustible substances and to the discharge of the charcoal-dust, which automatic action is essential if it is desired to obtain a really commercial working of the furnace with a maximum yield.

The furnace comprising the means by which this triple automatic action is obtained is represented in the accompanying drawings.

Fig. 1 is a vertical longitudinal section of the furnace according to one constructional method, this section being made along the line I-I of Fig. 2.

Fig. 2 is a vertical cross section on the line II-II of Fig. 1.

Fig. 3 is a horizontal section on the line III-III of Fig. 2.

As will be seen from these figures,

each compartment of the furnace (there are two in the figures, but it is possible to have only one or more than two) is divided into three parts A. B. C; the first part A or upper chamber forms the combustion chamber; it is into this chamber that the air passes and in which the volatile products contained in the residues are driven off. The second part B, situated below, is subjected owing to its position to the strong action of the upper current of air and the residues freed from their volatile contents are here carbonised and transformed into charcoal-dust. Finally, in the third part C or lower portion is provided the apparatus by which the quenching and discharging of the charcoal-dust is effected.

This having been explained, it is apparent, from the figures, how the triple automatic action afore-mentioned is effected.

The material (industrial residues) is passed along the whole length of a hopper 1 divided into several compartments and traversed along its axis by a shaft 2 to which any suitable motor transmits, by any suitable method of transmission a uniform movement of rotation; on this common shaft are mounted, in each compartment Archimedean screw members 3, 3', 3'', 4, 4', 4'', of opposite twist, so as to distribute the material and feed it up to the charging shafts 5, 5', 5'', to

the right of which are separating partitions 6, 6', 6". In these shafts turn vertical screws 7, 7', 7", operated by pinion transmission 8, 9, (8', 9', 8", 9"), or by any other suitable method of transmission; these screws feed the material methodically, prevent irregular descent and feed it up to the arch of the furnace.

This arrangement assures the distribution and the automatic feeding of the material to the height of the charging openings formed in the vault; these openings are three in number on the drawing but the number may evidently be variable according to the particular conditions of the furnace.

The material having thus been brought to the top of the arch it is necessary, as has been explained, to regulate the descent; for this purpose the chamber A is provided with two superposed plates 10, 11, each constituted by two longitudinal slabs forming between them a more or less open angle. The slabs 10 are jointed along the edge of the dihedral which they form and which opens towards the bottom of the furnace; their opposite edges 12, 12', do not touch the wall of the furnace, the space left free serving for the passage of the material which has fallen on the edge of the dihedral and descends on each side, on to the inclined planes 10, 10, with a rapidity which is proportional to the inclination

of these planes.

The slabs 11, 11, which meet the wall of the furnace, do not join at the apex 13, of the dihedral which they form and which opens towards the upper part of the furnace; the material falling through the openings 12, 12' slides therefore along the inclined planes 11, 11, with a rapidity which is proportional to the inclination of these planes and then collects in the channel 13 from which it falls into the second chamber B. A series of columns 14 (or any similar arrangement) supports the slabs (11, 11).

At the top of the chamber A, and in the front face of the furnace are provided the air openings 15, the section of which can be altered by a register not shown.

Through these openings 15 passes in an auxiliary air current which is caused by the draught. It follows from this that by suitably regulating thus the slope of the slabs 10, 10, and 11, 11 as well as the section of the openings 15, the descent of the residues can be regulated automatically in such a manner that the combustion of their volatile contents shall be absolutely complete.

The second chamber B is limited in height by the slabs 11, 11, and at the bottom by an arch 16 of a section practically semi-circular the convexity of which is turned towards the top

of the furnace; it is in this chamber and retained on this arch during a suitable time that the residues are converted into charcoal-dust free from a too rapid action of the air.

Between the adges of the arch and the walls of the furnace are provided spaces 17, 17, through which the charcoal-dust sliding over the arch 16 passes, into the third chamber C; it is there submitted to a cooling action by radiation by means of water or cold air, the action of the refrigerating substance being assisted by baffles 18, which prevent the too rapid descent of the charcoal-dust; finally, after this latter descent, which is automatically regulated, the charcoal-dust reaches the endless conveyor 19 which may be an Archimedean screw provided at the bottom of the contracted section of the furnace.

It will be seen that the automatic regulation of the rapidity of descent is effected automatically by the combination of slabs or arches forming a slope, transversely, the inclination of this slope being suitable to the nature of the residues to be burnt; in the generality of cases there is an advantage in adopting a slope of 35° ; this is completed by the division of the whole furnace into three chambers, one in which active combustion takes place, one for carbonisation, and

one for quenching (for the purpose of discharging).

It is possible, further, without departing from the present invention, and when it is a question of treating material of low density, to adopt the modification of the method of carrying the invention into effect which is shown in cross section on figure 4. In order to give greater rapidity of descent to the light materials the retaining device of the chamber A has been reduced to a single arch; this arch 20 may have the shape of the arch 16 in the first three figures, and it can also be constituted by a series of slabs 20 disposed transversely in the furnace, separated one from the other and either perforated or not with openings 21. The second chamber B is then limited by the arch 20 and by a similar arch 22 in which the holes 23 form a baffle with the openings 21. The chamber C is then similar to that in the first three figures; the baffles may always however be replaced by steps formed on the inclined portion 24 of the walls of the oven.

Consider further in the present invention the modification of the method of carrying the invention into effect shown in cross section in figure 5. This method of carrying the invention into effect provides for the case in which it is necessary to treat very light combustible substances, all the parts of which have the same density (saw-dust). In this

case, a rapid and irregular descent of the material to be treated is less to be feared; on the other hand the combustion of the volatile substances takes place almost instantaneously.

It is possible, therefore, to omit the carbonising chamber by employing the method of planes simply inclined to the base of the combustion chamber. The carbonisation is then carried out on the inclined walls 25, 25, of the furnace and on the sole plate with the double slope 26; the charcoal-dust then falls through the longitudinal channels 27, into the chamber C from which it is discharged in the manner already described.

Whatever may be the method adapted of carrying the invention into effect, the operation is carried out by heating the furnace to a red heat; the charging for the starting of the furnace is then carried out through the charging doors 28, which, of course, are closed during the normal working of the furnace.

As regards the method of charging during working it may be remarked that that previously described and shown on the first three figures would give the maximum advantage, but that, in certain installations, the charging need not take place over the whole length of the arch, but only

through one or more openings such as 29 (Fig. 4); a wheel provided with blades, or a ventilator, fed from a charging hopper can then force the material to be burnt to the upper portion of the chamber A.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:-

The invention has for its object a furnace, with one or more compartments, for the economical production of wood charcoal obtained by the combustion of industrial residues, such as nut-shells, the residuum of olives, saw-dust, etc., the said furnace having the following characteristics which assure the continuity and the automatic character of its operation.

1. Each compartment is divided, by means of slabs suitably inclined to the horizontal, and forming baffles, and arches, more or less curved, and either perforated or not perforated into three parts; a combustion chamber in which the orifices for the supply of air open on the face of the furnace a carbonising chamber situated below, and at the bottom a discharging and quenching chamber, the slabs and arches together with their inclinations being combined in such a manner as to automatically regulate the descent of the combustible

Myerson
is
application

3. The Applicant, therefore, applies for leave to file a Specification of the Invention pursuant to Part I of the Inventions and Designs Act 1888.

Louis Félizet
Louis Félizet

I, the Applicant abovenamed, do declare that the facts stated in this Application are true to my knowledge, except as to matters stated on information and belief and as to those matters I believe them to be true.

Dated this *twentieth* day of *January* 1912.

Louis Félizet
Louis Félizet
Louis Félizet

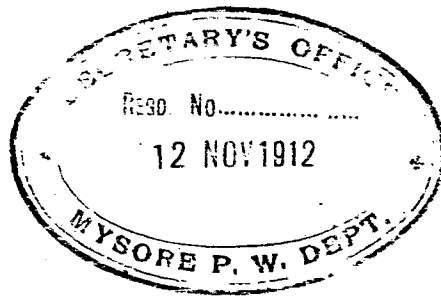


FIG. 1.

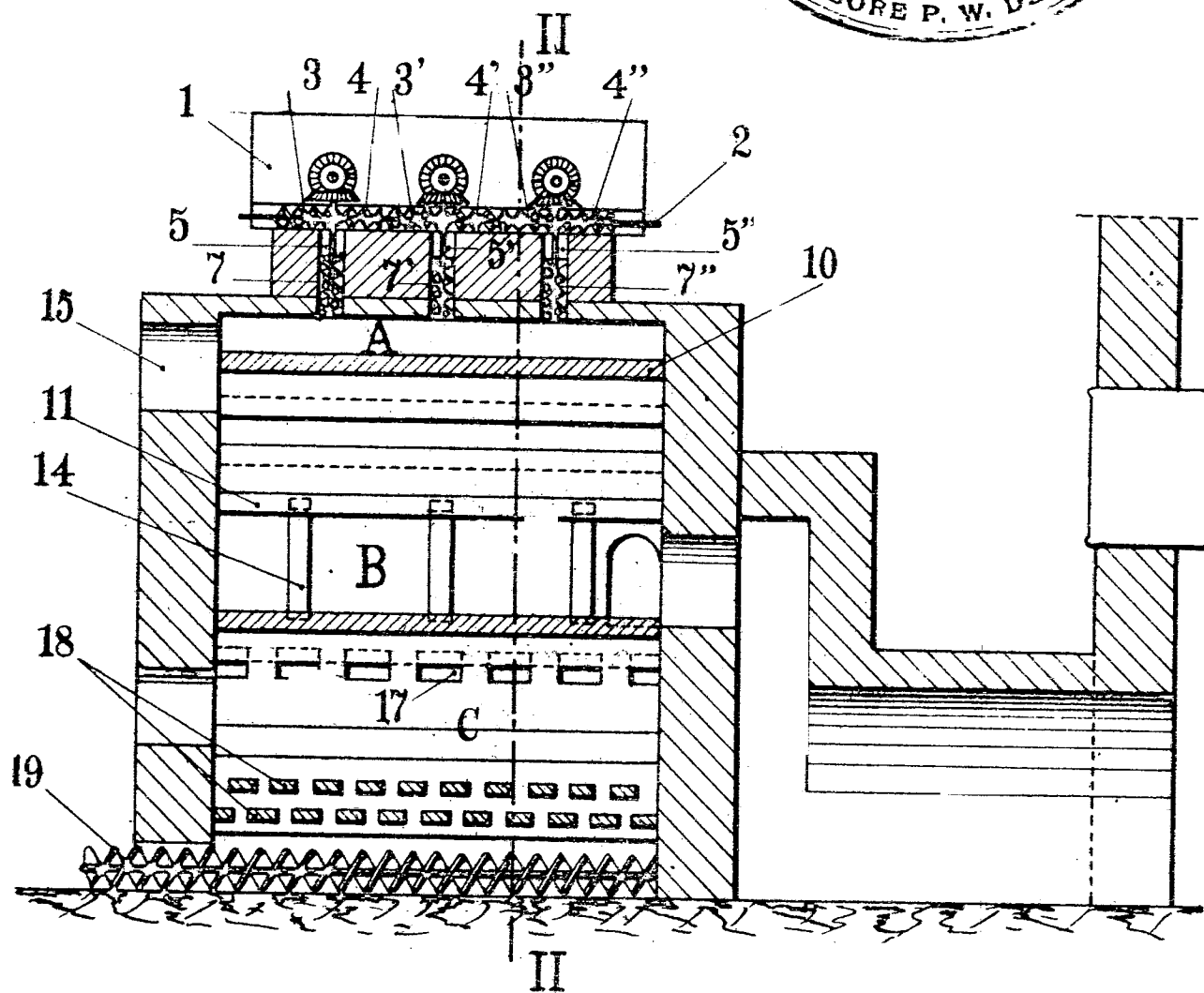


FIG. 3.

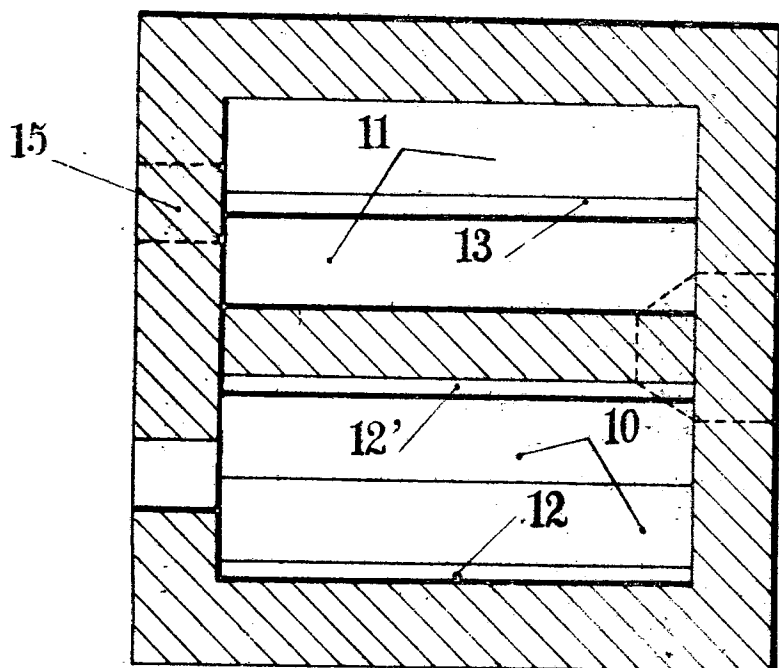


FIG. 2.

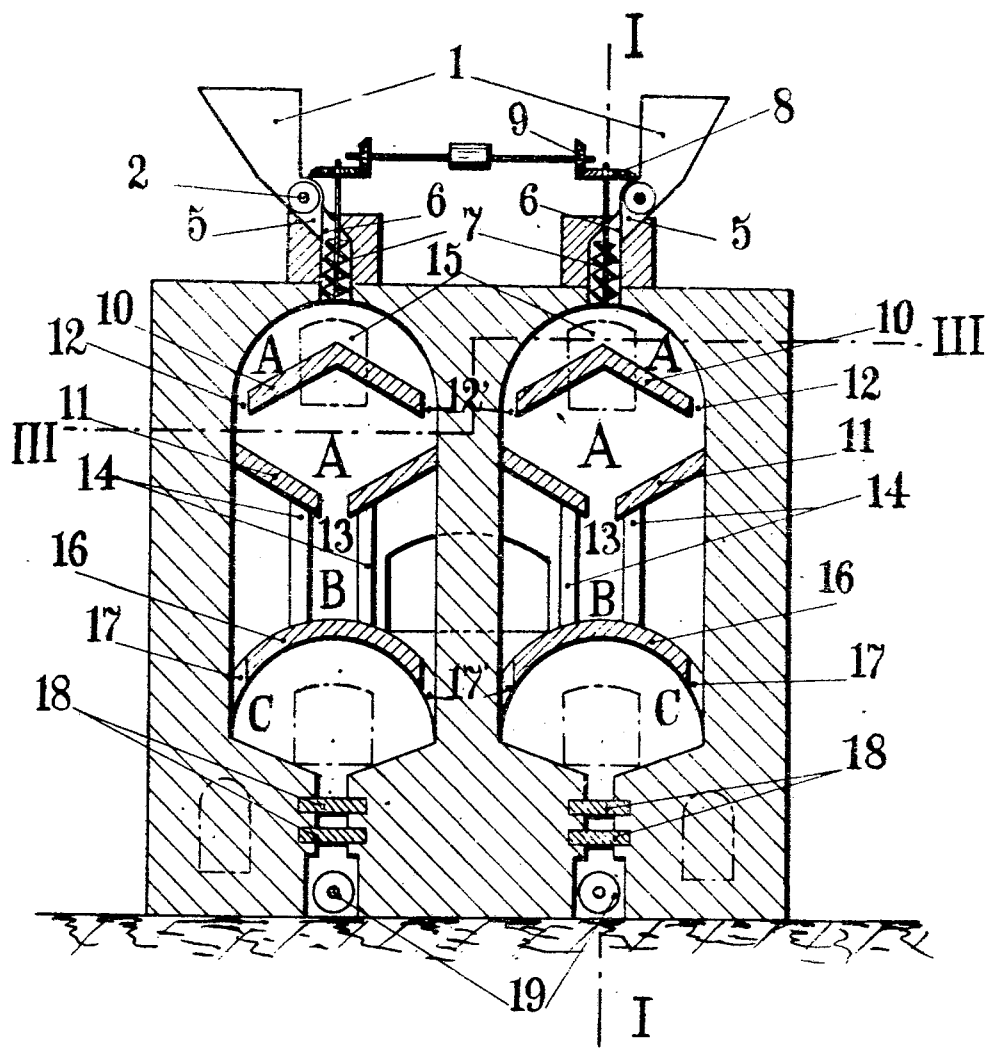


FIG_4_

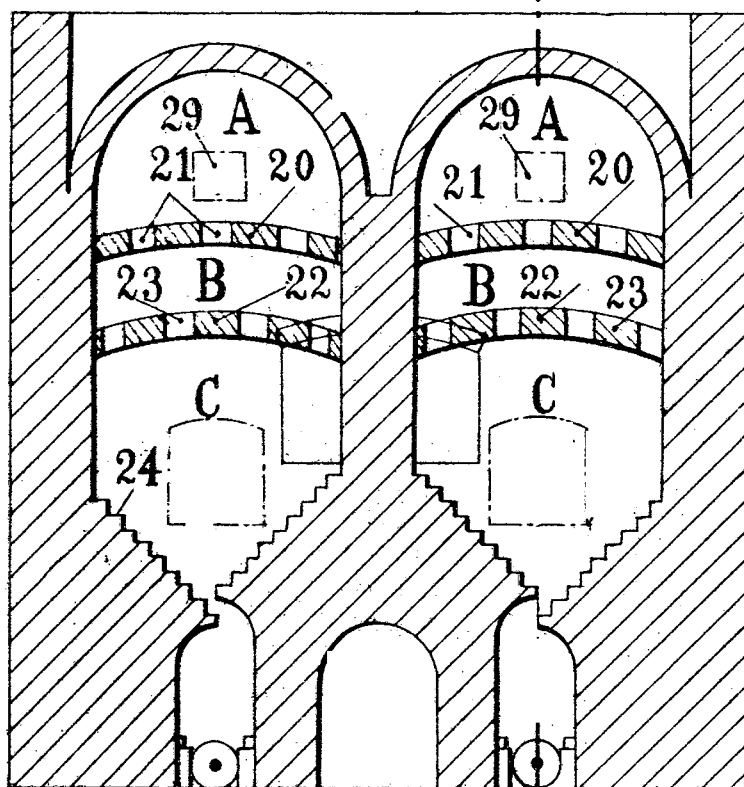
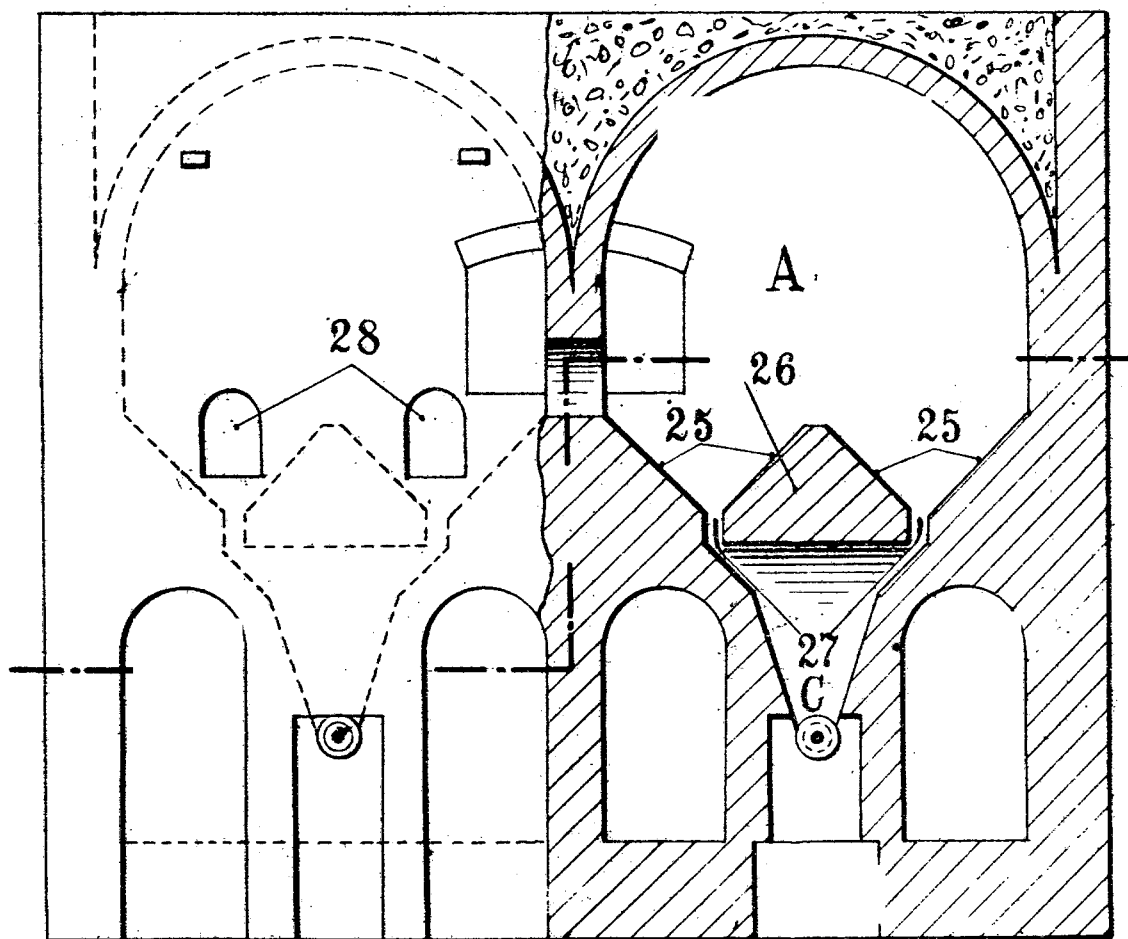


FIG_5_



3437

28/2

88/5

G.R.S. 29A]

190

From

me
off

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To

The Chief Engr The Support, Public Health
Institute and Chemical
Examiner to Govt

Dated

Despatched

Received

5-3-12

General No. " B. 4627

No. G. M. 235-11-2

ENCLOSURE No. 1

to be obligingly returned

Has the honor to forward
herewith a report under Sec 6(2)
of the Mysore Inventions and
Designs Regulation No XT of 1894
an application for leave to
file a specification of an invention
for improvements in furnaces
for burning the commercial
residues of different industries
extraordinary oil works, for the
purpose of obtaining wood
charcoal " by Munian Louis
Elizabeth of France.

By order

28/2/12
In Off. Secretary

4/3

Jimmy & cover in
led
7-3-12

G.R.S. 29A]

3. 8. 15
190

From

The Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To

The Superintendent
of Stamps

Dated

Despatched 5 - 3 - 12

Received

General No. G 4628
No. G. M. 235-11-3

ENCLOSURE No. one & Re one/

Has the honor to forward
herewith the Power-of-Attorney
constituting Rupert Remfrey
of Calcutta as Agent in the
matter of an invention for
"Improvements in furnaces
for burning the commercial
residues of different industries,
especially in oil-works, for the
purpose of obtaining wood
charcoal" by Louis Felizak
of France and to request that
the Power may be impressed
with the Mysore Govt. Stamp of
the value of Rs. one thereon (to be
forwarded) and returned

led
4/3

to this office.

By order
M
2072/12

For the Secretary

US, 41

Money & Comd issued
lll
7.3.12

G.R.S. 29A]

3865
190

From

The Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To

The Deputy Commissioner
Try Depto, Bangalore

Dated

Despatched *5. 3. 12*

Received

General No. *G 4629*

No. *G.M. 235-11-4*

ENCLOSURE No. *R2 cof.*

Has the honor to forward
herewith a sum of Rs 10/- being
the applica sum for received from
Messrs Remfry & Co Calcutta,
for leave to file a
specification of an invention
for "Improvements in furnaces
for burning the commercial
residues of different industries
especially in oil works for the
purpose of obtaining wood charcoal
by Louis Elizat, Director Delegate
of Société Huilerie et Savonnerie
de Lunan of Sallen France, and
to request the favor of an acknow-
ledgment for the receipt of the
amount.

By Order

GPB-10,000-9.4.06

112... for H. Secretaries

9

DIARY No. 3798

1911-1912
SECTION <i>fm.</i>
FILE No. 235-11
BOOK No. 104

Pcs. 10/

No. 58

No. 154

TREASURY dated

Received from *Levy: to Govt. of Mysore sent to*
Rev. Depts. Bank along

Poupees *ten only*

Annas *nil* and Pies *nil* being on account of the
application for received from Messrs. Rempsey & Son, Calcutta for
leave to file a specification for an invention for "Improvements
in furnaces for burning the coal residues of different industries
especially in oil works for the purpose of obtaining wood charcoal"

Chandamattarao
In charge of Treasury, *mys*

DIARY No. 3812

191 19/11 - 1912

SECTION Gen. Mys.

Superintendent of Stamps

CERIAL No. in Mysore.

From

N. Krishnamurthy Rao Esq.
Superintendent of Stamps
Mysore.

To

C. S. Balakrishna Iyer Esq.
offg Secy. to the Govt. Secy.
Gen. Secy. Dept.

Dated 7.

Despatched

March 19/12

Received

General No. 117

No.

Enclosure No. One

Stamped Power of Attorney

His Letter No. 9.4628/8m. 235-11.3
Docket

Dated 5 Dec 1912

Has the honor to return herewith
duly stamped the Power of Attorney
received with the above, and to request
the favor of an acknowledgment.

2 Krishnamurthy Rao

Superintendent of Stamps

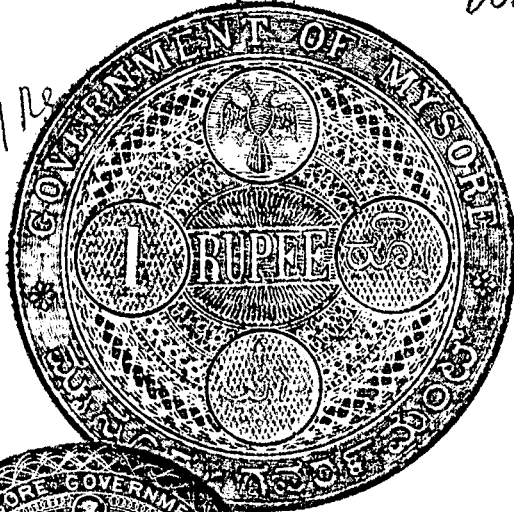
in Mysore.

20/3/12

GPB-500-277

Enclome to 800

Mysore



POWER OF ATTORNEY

---:-

In the matter of the Inventions and Designs Regulation 1894, of the Government of Mysore and in the matter of Louis Félizat, director-delegate of Société Huilerie et Savonnerie de Lurian, of Salon (Bouches du Rhône), France, an Inventor.

I, the abovenamed Louis Félizat, do hereby retain, constitute and appoint RUPERT REMFRY, of Calcutta, British India, Solicitor & Patent Agent, as my Agent and Attorney to apply for and obtain from the Government of Mysore and keep in force an Exclusive Privilege or Letters Patent for Improvements in furnaces for burning the commercial residues of different industries, especially in oil works, for the purpose of obtaining wood-charcoal and I authorise him to sign my name to such papers and writings and do such acts regarding the same, including the appointment of a substitute or substitutes, as may be necessary or expedient.

Dated this *twentieth* day of *January* 1912

Signed, Sealed and Delivered

at _____ in the
presence of

Deux témoins
(profession, adresse)

Louis Félizat
Ch. L.

From

18
3

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To

*The Superintendent
of stamps*

Dated

Despatched 23 - 3 - 12

Received

General No. G 5-001

No. G. M. 235-11-7

Enclosure No.

*Has the hona Wacknow-
ledge the receipt of the duly stamped
Power-of-attorney returned with
his ~~letter~~ docket no. 117 dated 7th
March 1912*

By order,

[Signature]
16/3/12

For Off Secy. Genl.
[Signature]

*Copied by
17/3/12
20-3-12*

No. 6517
mev

MYSORE P. W. DEPARTMENT.

CENTRAL OFFICE,

Bangalore,.....5th August.....1912.

From

M. VISVESVARAYA, Esq., M. I. C. E., C.I.E.,

Chief Engineer of Mysore, *ARY No 762*

To

K. R. Srinivasiengar, Esquire., M.A.,

Offg. Secretary to the Government of

His Highness the Maharaja of Mysore,

General and Revenue Departments.

SIR,

I have the honour to invite reference to your No.G.4627/
G.M.235-11-2 dated the 5th March 1912 forwarding for report an - -
application for leave to file a specification of an invention for
"Improvements in furnaces for burning the commercial residues of
different industries, especially in oil works, for the purpose of
obtaining wood charcoal" by Monsieur Louis Felizat of France.

2. The application was referred to the Secretary, Industries
and Commerce Committee, Mysore Economic Conference. Conv of his
letter No.123 dated the 11th July 1912, which contains his opinion, is
herewith forwarded for information.

The application and other enclosures are returned.

I have the honour to be,

Sir,

Your most obedient servant,

RC, Ananda

Chief Engineer of Mysore.

15/11
7/10/12

1912/13

MYSORE P. W. DEPARTMENT.

No. 6517.

From

THE CHIEF ENGINEER OF MYSORE,

Bangalore.

To The Secretary to Government of
Mysore,
General and Revenue
Departments

Dated Bangalore, 5th August 1912.

Despatched 6th August 1912

Enclosure No. 2

SUBJECT.

In re an application by
Monsieur Louis Feljat of France,
for leave to file a specification
of an invention for "Improvement
in furnaces for burning the com-
mercial residues in different
industries, &c.

Letter No. 123 dated the 11th July 1912 from the
Secretary, Industries and Commerce Committee, to the Chief
Engineer of Mysore.

In reply to your letter No.4043 dated the 20th May 1912,
I have the honour to return the application for leave to file a
specification of an invention by Monsieur Louis Felizat of France.
The nature of the opinion required is not clearly stated in your
letter and I am in doubt as to whether it is to the utility of
the invention or to the originality of the same. In regard to
the first point, wood distillation is not carried on at present
in Mysore and it is highly improbable that in the immediate - -
future this patent will be of any use in connection with - -
industrial work in Mysore. As regards the originality of the
invention, I am not in a position to make any definite statements
regarding the same; but a French patent No. 409.916 of the 1st
March 1910 has been granted and we may assume that since a patent
had been granted in France the invention possesses a certain
amount of originality sufficient to constitute the subject matter
for a patent. If further evidence on this point is required, the
applicant might be asked to state if his application for a patent
in the United Kingdom has been accepted.

~~~~~

*True Copy*

*J. L. Ishmael*  
*of Mysore*  
*by*

Diary No. of letter replied to 762No. G. 954

General and Revenue Secretariat

( )  
, the 19 . )

To

Messrs Rempsey & Son,Solicitors & Patent Agents,14, Hare Street, Calcutta.Date of issue 19-8-12Signed by Mr. B. Ramaswami Gentlemen,

With reference to your  
letter dated the 10<sup>th</sup> Feb<sup>y</sup> 1912, for-  
warding an application for  
leave to file a specification of  
an invention for "improvements  
in furnaces for burning the com-  
mercial residues of different  
industries especially in oil-works  
for the purpose of obtaining

over.

SUBJECT.

wood charcoal "by Mr Louis Felizat,  
of France, I am directed to request  
that an authenticated copy of  
the order passed on a corresponding  
application ~~made~~ stated to have  
been made in the United Kingdom  
of Great Britain, may be forwarded  
to this office for ref<sup>ce</sup>.

I have &c,

*hm*  
1578712

For the Secretary

*VS.41*

42  
*WLB*

List of enclosures,

Copied by

Examined by

GENERAL.

To

THE ~~PATENT~~ SECRETARY, TO THE GOVERNMENT OF MYSORE,  
~~PATENT OFFICE,~~ GENL. & REV. DEPTS.  
CALCUTTA. BANGALORE,  
M Y S O R E.

FROM

REMFRY & SON,  
SOLICITORS AND PATENT AGENTS,  
CALCUTTA.

2.2.48

Dated CALCUTTA, the 17th Octr 1912.

12 Sir, 13

for: mis

235 of 1911-12

10

re L. FELIZAT. (MYSORE)

Dept. P. File Lr. M.  
FILE INDICATION,  
Mysore Pats.

In compliance with your letter No. G 954/G.M.235-11-9 dated 19th August 1912, we beg to forward herewith a certified copy of the British printed Specification No. 4935/11 and solicit the favour of early Orders upon this Application.

We have the honour to be,

Sir,

Your very obedient servants,

1 Enclo.

REMFRY & SON

I.M.B.

Diary No. of letter replied to.....

No. 42427

(En2)

General and Revenue Secretariat

( )

, the

19 .

To

The Chief-engineer of MysoreSir,Date of issue 7-11-12With reference to yourSigned by Mr. B.T. Kesanarengarletter no. 6517 of the 5<sup>th</sup> August 191forwarding the opinion of theSecretary to the Industries andCommerce Committee of theEconomic Conference in re thespecification of an inventionfor "improvements in furnacesfor burning the commercialresidues of different industriesespecially in oil-works for the

over.

SUBJECT.

purpose of obtaining wood charcoal"  
 by Mr. Louis Elizat of France,  
 I am directed to forward herewith  
 a Certified Copy of the British  
 printed specification of a similar  
 invention by the same inventor  
 received from Messrs Remfry and  
 Son, Calcutta, and to request that  
~~the opinion of the Secretary to~~  
~~the Industries and Commerce~~  
~~Committee~~ may be obtained and furnished  
 as to whether, under the circumstances,  
 the leave applied for for filing  
 the specification subd. to this  
 Govt may be granted under  
 Sec 19 of the Mysore Patents and  
 Designs Regulation XI of 1894.

List of enclosures, *Pl 2*  
 P. 100 -

2. I am to add that the ~~benefit~~  
 contemplated  
 which by ~~reference to~~ in the last named  
 series to be general ~~and it need~~  
 section ~~be a general one and need~~  
~~to be restricted~~ (the present need of) state  
 not be restricted to the Mysore Province.

Subject to approval  
 Keep.

2. The specific ~~provision~~ returned  
 with your letter under reply is re-transmitted  
 for refce and return.

Copied by  
 Examined by

Have to  
*10/5-11-12*  
 In the Secretariat.

Mysore public works department,  
Central office,

No. 9498/1912

Dated Bangalore, 22<sup>nd</sup> November 1912

From

The Chief Engineer of Mysore,  
Bangalore.

DIARY No. 2768

To

K.R.Srinivasalingar, Esq., M.A.,

Offg. Secretary to the Government of

His Highness the Maharaja of Mysore,  
General and Revenue departments.

|                         |
|-------------------------|
| 19/12-19/13             |
| SECTION Gen: Mis        |
| FILE No. 235 of 1911-12 |
| SERIAL No. 12           |

Sir,

With reference to your letter No. G.2427/G.M.235-11-11 dated the 7th November 1912 forwarding for opinion a certified copy of the British printed specification of an invention received from Messrs. Remfry and Son, Calcutta, for "Improvements in furnaces for burning the commercial residues of different industries especially in oil works for the purpose of obtaining wood charcoal" by Mr. Louis Felizat's method, I have the honour to inform you that, under the circumstances stated therein, there is no objection to granting the leave for filing the specification.

2. The enclosures received with your letter under - - - reference are herewith returned.

I have the honour to be,

Sir,

Your most obedient servant,

H. Thimmaraj  
for Chief Engineer of Mysore.

S.S.

*I Certify this, including the Drawing forming part thereof, to be a true Copy.*

*J. H. Haffield*  
Acting for Comptroller.

*See to self*  
N<sup>o</sup> 4935

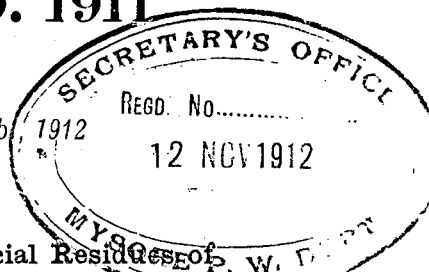


A.D. 1911

Date of Application, 27th Feb., 1911—Accepted, 27th Feb. 1912

COMPLETE SPECIFICATION.

**Improvements in Furnaces for Burning the Commercial Residues of Different Industries, especially in Oil Works, for the purpose of Obtaining Wood-charcoal.**



I, LOUIS FÉLIZAT, Director-delegate of Société Huilerie et Savonnerie de Lurian, of Salon (Bouches-du-Rhône), France, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

- 5 The present invention relates to improvements in furnaces in which waste materials, such as the residuum of olives, nut shells, sawdust and other woody substances, are burnt for the production of charcoal, of the kind having a number of superposed compartments or sections in which the operations of drying and carbonising the material, in the same or different compartments, and the cooling and discharge of the charcoal are effected, the substances being caused to travel through the compartments under the action of gravity by means of a series of inclined surfaces or walls upon which they fall when introduced into the compartments by an automatic feeding device.

- 10 The rapidity with which these waste substances burn, when thrown into a furnace brought to a high temperature, necessitates considerable dexterity in charging and discharging the furnace. This is especially the case in removing the charcoal produced which quickly clogs the furnace, since, in the arrangement as employed in practice, the discharging operation is effected in a furnace provided with several compartments by stopping the different compartments alternately and withdrawing the charcoal from the bottom by means of rakes for the purpose of directing it to a truck, where it is quenched.

- 15 It should further be remembered, that the charcoal formed, if it falls too rapidly to the bottom of the furnace, still contains a relatively large percentage of volatile substances, thus on the one hand, diminishing the efficiency of the furnace as a heating apparatus and on the other hand, limiting the capability for employment of the charcoal produced.

- 20 Finally, the circulation of the air in the furnace requires careful supervision for if the charcoal brought to a red heat and freed from its volatile contents is brought into contact with a strong current of air it is instantly transformed into ashes.

- 25 The present invention has for its object to increase the efficiency of the furnace as regards these three considerations. This is secured by providing not only for automatic action in feeding the combustible substances to the furnace and regulating their descent through the same, but providing for the quenching and automatic discharge of the charcoal produced by mechanical means, this automatic action being essential if it is desired to obtain a really efficient working of the furnace with a maximum yield.

The furnace comprising the means by which this triple automatic action is obtained is represented in the accompanying drawings.

- 30 Fig. 1 is a vertical longitudinal section of the furnace according to one constructional arrangement, this section being made along the line I—I of Fig. 2.

[Price 8d.]

*Impts. in Furnaces for Burning the Commercial Residues of Different Industries, &c.*

Fig. 2 is a vertical cross section on the line II—II of Fig. 1.

Fig. 3 is a horizontal section on the line III—III of Fig. 2.

As will be seen from these figures, each longitudinal compartment of the furnace (two compartments are shown in the figures, but it is possible to have more than two, or only one), is divided into three parts A, B, C; the first part 5 or upper chamber A forms the combustion chamber; it is into this chamber that air is admitted for combustion and in which the volatile products contained in the combustible substances are driven off. The second part B, situated below, is subjected, owing to its position, to the strong action of the upper current of air and the combustible substances freed from their volatile contents are 10 here carbonised and transformed into charcoal. Finally, in the third part, or lower portion C, is provided the apparatus by which the quenching and discharging of the charcoal is effected.

The combustible substances (industrial residues) are fed to a hopper 1—divided into several compartments and traversed by a shaft 2 to which a suitable motor 15 transmits uniform rotation by any suitable method of transmission; on this common shaft are mounted, in each compartment archimedean screw members 3, 3<sup>1</sup>, 3<sup>11</sup>, 4, 4<sup>1</sup>, 4<sup>11</sup>, a right and left handed screw being provided in each compartment so as to distribute the combustible substances uniformly and feed them to the charging shafts, 5, 5<sup>1</sup>, 5<sup>11</sup>; separating partitions 6, 6<sup>1</sup>, being provided 20 between the respective shafts. On these shafts rotate vertical screws 7, 7<sup>1</sup>, 7<sup>11</sup>, operated by bevel gearing 8, 9, 8<sup>1</sup>, 9<sup>1</sup>, 8<sup>11</sup>, 9<sup>11</sup>, or by any other suitable method of transmission; these screws prevent irregular descent of the combustible substances and feed them methodically up to the arch of the furnace.

This arrangement ensures the regular distribution of, and the automatic 25 feeding of the combustible substances to the charging openings formed in the arch of the furnace; three openings are shown on the drawing but the number may evidently be variable according to the particular conditions under which the furnace is to work.

The combustible substances having thus been brought to the top of the arch 30 of the furnace, it is necessary, as has been explained, to regulate their descent through the latter; for this purpose the chamber A is provided with pairs of superposed slabs 10, 11, each pair consisting of two longitudinal slabs forming between them a more or less obtuse angle. The slabs 10 are jointed along the edge of the dihedral angle which they form and which opens towards the bottom 35 of the furnace; their outer edges 12, 12<sup>1</sup> do not touch the wall of the furnace, the space left free serving for the passage of the combustible substances which have fallen on the edge of the dihedral angle and descend on each side of the inclined slabs 10, 10, with a rapidity which is proportional to the inclination of the slabs. 40

The slabs 11, 11 which join the wall of the furnace, do not join at the apex 13, 41 of the dihedral angle which they form and which opens towards the upper part of the furnace; the combustible substance falling through the spaces adjacent the edges 12, 12<sup>1</sup> therefore slides down the inclined slabs 11, 11 with a rapidity which is proportional to the inclination of these slabs and then collects in the 45 channel 13 from which it falls into the second chamber B. A series of columns 14 (or any similar arrangement) support the slabs (11, 11).

At the top of the chamber A, and in the front face of the furnace are provided the air openings 15; the section of which can be altered by a register not shown.

Through these openings 15 passes in a current of air which is induced by 50 the draught. Thus, by suitably regulating the slope of the slabs 10, 10, and 11, 11, as well as the section of the openings 15, the descent of the combustible substances can be regulated automatically in such a manner that the combustion of their volatile contents shall be absolutely complete.

The second chamber B is limited above by the slabs 11, 11, and at the bottom 55 by an arch 16 of a practically semi-circular section, the convexity of which is turned towards the top of the furnace; in this chamber and retained on this

*Impts. in Furnaces for Burning the Commercial Residues of Different Industries, &c.*

arch during a suitable time, the residues are converted into charcoal free from a too rapid action of the air.

Between the edges of the arch and the walls of the furnace are provided apertures 17, 17. Through these the charcoal sliding over the arch 16 passes  
 5 into the third chamber C where it is cooled by radiation or by means of water or cold air, the action of the cooling medium being assisted by baffles 18, which prevent the charcoal from descending too rapidly; finally, the charcoal reaches the endless conveyor 19 which may take the form of an archimedean screw provided at the bottom of the contracted section of the furnace.

10 In the operation of the furnace it will be understood that air is drawn in through the openings 15 and serves to assist the combustion of the gases evolved by the substances on their passage through the hot furnace. The waste gases then pass into the chamber B and escape by way of the discharge flue D.

It will be seen that the rate of descent of the substances is regulated auto-  
 15 matically by the combination of slabs and arches forming sloping surfaces, the inclination of the surfaces being suitable to the nature of the combustible substances to be treated; in the majority of cases it is most advantageous to adopt a slope of 35°. The thorough treatment of the combustible substance is ensured by the division of the furnace into three chambers, one in which active com-  
 20 bustion takes place, one for carbonisation, and one for the purpose of quenching the charcoal before discharging. When material of low density is to be treated, the modification of the method of carrying the invention into effect which is shown in cross section in Figure 4 may be adopted. In order to allow the light materials to descend at a greater speed the retaining device of the chamber A  
 25 as shown in Fig. 2 has been reduced to a single arch; this arch 20 (Fig. 4) may resemble in shape the arch 16 in the first three figures, or it may also be constituted by a series of slabs 20 disposed transversely in the furnace, separated one from the other, and perforated if required with apertures 21. The second chamber B is then limited in extent by the arch 20 and by a similar arch 22,  
 30 in which the apertures 23 are arranged alternately with the apertures 21. The chamber C is then similar to that shown in the first three figures; the baffles may however, be replaced by steps formed on the inclined portion 24 of the walls of the oven.

A further modification of the method of carrying the invention into effect is  
 35 shown in cross section in Figure 5. This modification provides for the case in which it is necessary to treat very light combustible substances, all the parts of which have the same density (*e.g.* saw-dust). In this case, a rapid and irregular descent of the material to be treated is less to be feared; but, on the other hand the combustion of the volatile substances takes place almost  
 40 instantaneously.

For this reason, therefore, the carbonising chamber is omitted and sloping surfaces are employed simply inclined to the base of the combustion chamber. The carbonisation is then carried out on the inclined walls 25, 25, of the furnace and the sole plate 26 which is provided with sloping surfaces; the charcoal then  
 45 falls through the longitudinal channels 27, into the chamber C from which it is discharged in the manner already described.

Whichever construction is adopted for carrying the invention into effect, the operation is carried out in each case by first heating the furnace to a red heat; the charge for the starting of the furnace is introduced through suitable  
 50 charging doors, as shown in Fig. 5 at 28, which, of course, are closed during the normal working of the furnace.

As regards the method of charging during working it may be remarked that the method previously described with reference to the first three figures would give the maximum advantage, although in certain cases, the charging need  
 55 not take place over the whole length of the arch, but only through one or more openings such as 29 (Fig. 4). The material to be burnt is then forced by a wheel provided with blades to the upper portion of the chamber A.

*Impts. in Furnaces for Burning the Commercial Residues of Different Industries, &c.*

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a furnace for the production of charcoal from waste material, of the kind described, the combination of means for automatically feeding the materials 5 into the furnace, regulating the descent through the furnace and for automatically and mechanically discharging the charcoal produced, substantially as described.
2. In a furnace for the production of charcoal from waste material, of the kind described, as set forth in Claim 1, the provision of inclined surfaces, arches 10 or the like arranged in the manner and for the purpose substantially as described.
3. In a furnace for the production of charcoal from waste material, of the kind described, as set forth in Claim 1, means for feeding the materials to the furnace comprising one or more charging channels provided with conveyors, 15 substantially as described.
4. A furnace for the production of charcoal from waste material, substantially as described with reference to and as shown in the drawings.

Dated this 27th day of February, 1911.

*Edw. Evans & Co.*

EDWARD EVANS & Co.,  
27, Chancery Lane, London, W.C., 20  
Agents for the Applicant.

FIG. 1-

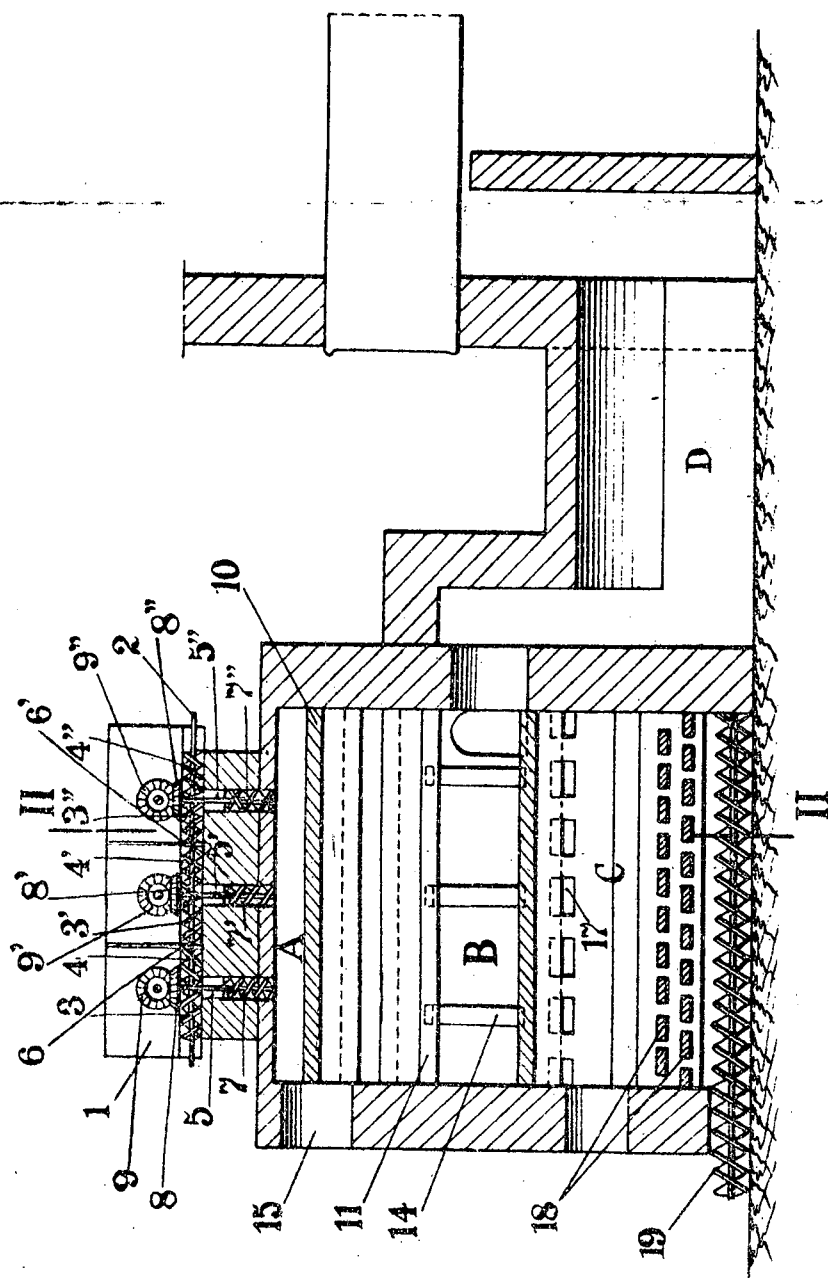


FIG. 3-

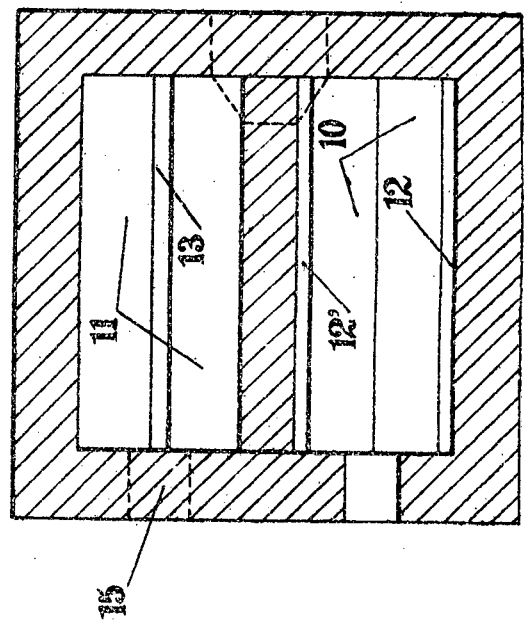
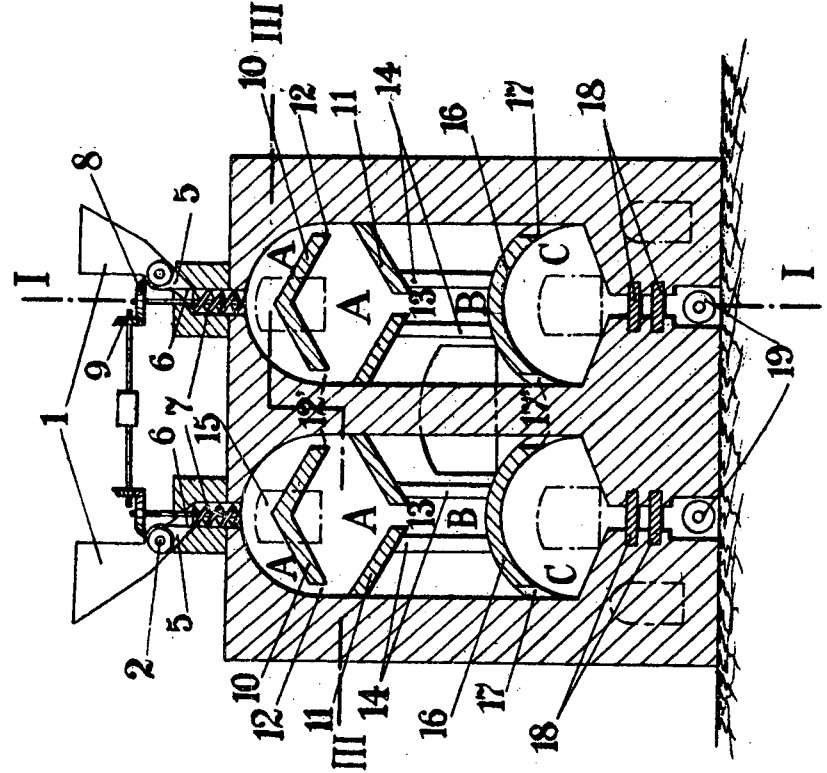


FIG. 2-



[This Drawing is a reproduction of the Original on a reduced scale]

G. 2965/G.M. 235-11-13.

GOVERNMENT OF MYSORE

## General Department.

Register No. 8 of 1901-12

Bangalore, the 4<sup>th</sup> Dec 1912.

WHEREAS an application, dated the 16<sup>th</sup> January 1912, and received on the 13<sup>th</sup> February 1912, has been submitted under Section 5 of the Mysore Inventions and Designs Regulation, 1894, by Louis Felizat, Director, delegate of Societe Huilerie et Savonnerie de Lwisian, of Salon (Bouches-du-Rhone), France (hereinafter referred to as "the applicant") for leave to file a specification of an invention for "Improvements in furnaces for burning the commercial residues of different industries, especially in oil works for the purpose of obtaining wood-charcoal"

And whereas the applicant has duly complied with all the requirements of Section 5 of the said Regulation;

The Government of Mysore are pleased, under Section 6 of the said Regulation, to authorize the applicant to file a specification of the said invention in accordance with the provisions of the said Regulation.

ORDERED, that the applicant be, and he is hereby, informed accordingly.

By Order of the Government of Mysore,

*[Signature]*  
28.11.12

*[Signature]*  
28.11.12  
For the Secretary to the Govt. of Mysore,  
Gen. and Rev. Depts.

Certified that the fees prescribed in the fourth schedule to the Mysore Inventions and Designs Regulation, 1894, in respect of the application for leave to file the said specification and of the filing thereof have been paid by the applicant; and that the specification hereinbefore described has been duly filed in accordance with the provisions of Section 8 of the said Regulation on this the Seventeenth day of April 1913.

*[Signature]*

For the Secretary to the Govt. of Mysore,  
Gen. and Rev. Depts.

*(Section 8 of the Inventions and Designs Regulation, 1894:)*

8. (1) If within six months from the date of an order under Section 6, Sub-Section (1), or within such further time, not exceeding three months, as the Government of Mysore, in its discretion, may, on cause shown to its satisfaction and on payment of the fee prescribed in that behalf in the fourth schedule, see fit to allow, the applicant causes a specification of his invention to be filed in manner by this Part required, and the fee prescribed in the fourth schedule in respect of the filing of the specification to be paid, the applicant shall, subject to the other provisions of this Part, be entitled to the exclusive privilege of making, selling and using the invention in the Territories of Mysore, and of authorizing others so to do, for a term of fourteen years from the date of the filing of the specification.

(2) But an exclusive privilege in respect of an invention of a new manufacture shall, notwithstanding anything in Sub-Section (1), cease, if the inventor fails to pay, within the time limited in that behalf by the fourth schedule, any fee prescribed in that schedule in respect of the continuance of the privilege.

(3) If, nevertheless, in any case, by accident, mistake, or inadvertence, an inventor fails to pay any such fee within the time so limited, he may apply to the Government of Mysore for an enlargement of the time for making the payment.

(4) Thereupon the Government of Mysore may enlarge the time accordingly, on payment of the fee prescribed in that behalf in the fourth schedule, and subject to the following conditions, namely :—

- (a) the time for making a payment shall not in any case be enlarged for more than three months ; and
- (b) if any suit is instituted in respect of an infringement of the exclusive privilege committed after a failure to make a payment within the time limited for the making thereof and before the enlargement of that time, the Court disposing of the suit may, if it thinks fit, refuse to award or give any damages in respect of the infringement.

G.R.S. 26]

gm File No. 235-1

Serial No. 14

Diary No. of letter replied to 2768

No. G. 2966 (G. 1)

General and Revenue Secretariat

To

( )  
the 19 .

Messrs Remfry & Son, ---

Solitors and Patent Agents,

Date of issue 4-12-12

Calcutta

Signed by Mr B Ramaswamia

Gentlemen, ---

with reference to correspondence

ending with your letter dated the

17<sup>th</sup> Oct. 1912, I am directed

to forward herewith Govt Order

No. G. 2965 dated the 4<sup>th</sup> Dec 1912

gm 235-11-13

authorising Louis Felizat of

France to file a specification of

his invention for "Improvements

in furnaces for burning the Commercial

over.

SUBJECT.

Typed  
RMR

residues of different industries, especially  
in oil works for the purpose of obtaining  
wood charcoal" and to request that  
the fact may be communicated to  
the party concerned.

I have so,

hm  
25.11.12

For offs Secretary

28/11/12

LB

List of enclosures,

Copied by  
Examined by

GENERAL.

REGISTERED.

D. 5518  
9.

To

THE ~~PATENT~~ SECRETARY, TO THE GOVERNMENT OF MYSORE,

~~PATENT OFFICE~~, GENL. & REV. DEPTS.,

CALCUTTA

BANGALORE,

FROM

MYSORE.

REMFRY & SON,

S

AND PATENT AGENTS,

CALCUTTA.

Dated CALCUTTA, the 4th April 1913.

Sir,

DIARY No. 5518  
6

Dept. P. File L. M.

FILE INDICATION.

Mysore Pats.

1912-1913

SECTION for: mis

FILE No. 235 of 1911-12

CER. No 15

re L. FELIZAT. MYSORE NO. 8 of 11-12.

Pursuant to the Order granting leave in this matter dated 4th December 1912, Register No. 8 of 1911-12, we have the honour to forward herewith 4 copies of the Specification of LOUIS FÉLIZAT, Director-délégué of Société Huilerie et Savonnerie de Lurian of Salon (Bouches-du-Rhone), France, in respect of his Invention for "IMPROVEMENTS IN FURNACES FOR BURNING THE "COMMERCIAL RESIDUES OF DIFFERENT INDUSTRIES, ESPECIALLY IN OIL "WORKS FOR THE PURPOSE OF OBTAINING WOOD-CHARCOAL".

The above mentioned Order is enclosed and we solicit the favour of your filling in the Certificate at foot thereof and having same signed.

A Post Office Order for Rs. 30/- is sent to-day.

We have the honour to name our Office in Calcutta as the Address for Service under the Act.

We have the honour to be,  
Sir,  
Your very obedient servants,

Bk. Post.

4 Specns.

I.M.B.

P.S.- We shall be obliged by your filling in in the Order the date thereof, namely, 4th December 1912.

COUPON. The remitter may write here any communication to the payee.

Re. 30 : re L. Félizat. Mysore No. Remitter.

8/11-12 (See our letter of date)

8/4/13

To Re V

8/4/13

19/11 at  
2 15  
MYSORE GOVT. GENL & REV. SECRETARIAT.

No. G. 6857

Dated. Bangalore, ... and May ... 1903

S. No. 235-1-16

X  
(Published on page 496 of Part I  
of the Gazette of 8-5-13)

NOTIFICATION.

PATENT)

The following specification of an invention has been filed in accordance with Sections 8, 9, 10 and 11 of Regulation XI of 1894 (The Inventions and Designs Regulations) and is open to inspection at the Mysore Government Secretariat on application to the Secretary to the Government of His Highness the Maharaja of Mysore, General and Revenue Departments, and on payment of a fee of one Rupee

By Louis Felizat Director delegate of  
Société Industrielle et Savonnerie de Lirieu of  
Salon (Bouches - du - Rhone), France.

Improvements in furnaces for burning  
the commercial residues of different industries,  
especially in oil works for the purpose of obtaining  
wood-charcoal."

By Order,

ML

For 4/8 Secretary.

To

The Compiler, Mysore Gazette, for publication

48/15  
19/11  
No. S 5858 (82)  
S. m. 235-11-17

MYSORE GOVT. GEN & REV. SECRETARIAT,  
Dated Bangalore, <sup>May</sup> ~~2nd April~~ 1913.

From

The Secretary to the Government of H. H. the Maharaja of Mysore,  
General and Revenue Departments.

To

Messrs. Remiffy and Son  
Solicitors and Patent Agents,  
Calcutta

Sir, Gentlemen,

With reference to your letter dated the 24<sup>th</sup> April 1913, I am directed to forward copy of a Notification No. G. 6857/S. m. 235-11 dated <sup>May</sup> ~~3rd April~~ 1913 issued by this Government in regard to the invention filed by you under Regulation XI of 1894 (The Inventions and Designs Regulations.) and <sup>in latter</sup> request that the same may be communicated to the party concerned.

The order granting permission to file specification is herewith returned, with <sup>in latter</sup> the certificate at foot, duly filled in and signed.

I have the honor to be,

Sir,

Your most obedient servant,

*For the*

Secretary.

From

Secy. to the Govt. of His Highness  
The Maharaja of Mysore,  
Genl. and Rev. Dept.

To

- (1) The Chief Engineer of Mysore.
- (2) The Supdt, Govt Museum.
- (3) The State Geologist in Mysore.

Dated

Despatched 3rd May 1913

Received

General No. G. 6859-61

No. G.M. 235-11-18

Enclosure No. 1 each

Has the honor to forward  
herewith for record in his Office a  
copy of the specification of an  
invention for "Improvements in  
furnaces for burning the com-  
mercial residues of different  
industries, especially in oil work  
for the purpose of obtaining  
wood-charcoal" by Louis Feliza  
of France, and to request the  
favor of an acknowledgment.

By Order,

*[Signature]*

For the Secretary

From

Secy. to the Govt. of His Highness  
The Maharaja of Mysore,  
Genl. and Rev. Dept.

To

The Deputy Commr.  
Treasury Deptt.,  
Bangalore

Dated

Despatched 3rd May 1913

Received

General No.

9.6862

No.

G.m. 235-11-19

Enclosure No. with Rs 20

Has the honor to forward  
herewith a sum of Rs 30 (Thirty)  
received from Messrs Rempsey &  
Son, Calcutta, being the fee payable  
under Schedule IV cl(2) of the  
Mysore Inventions and Designs  
Regulation No. XI of 1894 for filing  
a specification of an invention  
for "Improvements in furnaces  
for burning the commercial residue  
of different industries, especially in  
oil works for the purpose of obtaining  
wood-charcoal" by Louis Felizat  
of France and to request the favor  
of an acknowledgment for the  
receipt of the amount

By Order,



~~11X. Haring~~  
~~Agave~~  
~~115 11~~

Jan. 235 of 1911  
80 20

DIARY No. 6159/9

Book No. 104

Rs. 30/-

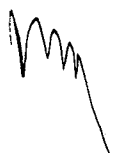
Bangalore Treasury

No. 35  
SECTION  
dated 3-5-13  
FILED

Received from Secretary of the Govt of Mysore

Poupees Thirty - of

Annas — and Pies — being on account of  
fee in respect of an invention in his  
his docket No 8682 dated 3-5-13  
S.N. 235-11-19

 K. Ramaswami  
In charge of Treasury.  
Bangalore

Noted & returned to Secy

  
6/5

No. 284  
 1912-1913  
 SECTION *gen: mis*  
 FILE No. 235 of 1911-12  
 SERIAL No. 21  
 FROM

OFFICE OF ECONOMIC BOTANIST,  
 SUPERINTENDENT, MYSORE GOVERNMENT MUSEUM,  
 Bangalore, dated *5<sup>th</sup> May* 1913.

G. H. KRUMBIEGEL, Esq., F.R.H.S.,  
 Economic Botanist,  
 Superintendent, Mysore Govt. Museum,  
 Bangalore.

To

*The Secretary to the Govt. of M.S.  
 the Maharaja of Mysore,  
 Gen. and Rev. Depts.*

Sir,

I have the honor to acknowledge  
 receipt of a copy of the Specification  
 of an invention for "Improvements  
 in furnaces for burning the —  
 Commercial residues of  
 different industries for the  
 purpose of obtaining wood charcoal  
 by L. Felizet of France, forwarded  
 with your No. G. 6859-61/G.H. 235-11-8,  
 recd. the 3<sup>rd</sup> instant.

I have the honor to be  
 your most obedient servant

*G. H. Krumbiegel*  
 Superintendent.

*Govt. Museum*

7/5  
From

191 2-13

G. H. KRUMBIEGEL, Esq., F.R.H.S.,

Economic Botanist,

Supt., Mysore Govt. Museum,

To

Bangalore.

*The Secretary to the Govt. of  
M.H. the Maharaja of Mysore  
Gen. and Sec. Dept.*

Dated 5<sup>th</sup> May 1913

Despatched 6<sup>th</sup> — — —

Received

General No. 284  
No.

Enclosure No...

*Acknowledging receipt  
of a Copy of the Specification  
of an invention for  
"Improvements in  
furnaces for burning  
the Commercial residue  
of different industries  
for the purpose of obtaining  
Wood Charcoal" by L. Klein*

M.G.D. 13]

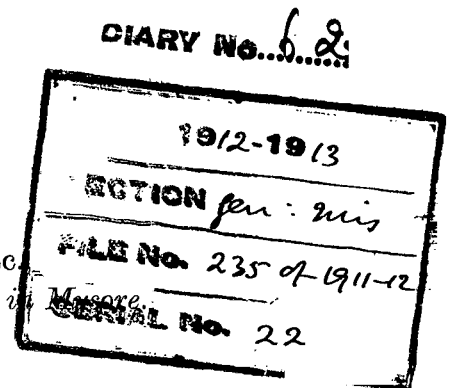
MYSORE GEOLOGICAL DEPARTMENT,

DATED BANGALORE,.....5<sup>th</sup> May 1913.....19

No. 2719

FROM

DR. W. F. SMEETH, M.A., D.Sc., A.R.S.M., etc.  
State Geologist in Mysore



TO

K.R. Srinivasa Iyengar, Esquire, M.A.,

Offg: Secretary to the Government of His Highness

the Maharaja of Mysore, General & Revenue Depts:.

B A N G A L O R E.

SIR,

I have the honour to acknowledge, with thanks, the receipt of a copy of the Specification of an Invention for "Improvements in furnaces for burning the Commercial residues of different industries for the purpose of obtaining wood charcoal" by Louis Felizat of France, forwarded with your docket No. G. 6859-61/G.M. 235-11-18, dated the 3rd May 1913.

I have the honour to be,

Sir,

Your most obedient servant,

K.T.G.

  
For State Geologist in Mysore.  


V  
16/5/13  
WA  
16/5/13 (4-50)

Mysore public works department,  
central office,  
dated Bangalore, 15th May 1913.

No. 389

DIARY No. 6439

From

The Chief Engineer of Mysore

Bangalore.

To

K.R. Srinivasalingar, Esq., M.A.,

Offg. Secretary to the Government of

His Highness the Maharaja of Mysore,  
General and Revenue Departments.

Sir,

I have the honour to acknowledge, with thanks, the receipt of a copy of the specification of an invention for "improvements in furnaces for burning the commercial residues of different industries for the purpose of obtaining wood charcoal" by Louis Felix of France, received with your memo No. G.6859-61/G.M.235-11-18 dated the 3rd May 1913.

I have the honour to be,

sir,

your most obedient servant,

J. J. Mahalingam  
Deputy Chief Engineer,

Mysore P.W. Department.

S.S.